

alkylene glycol dimethacrylate. Claims 1 and 15 have, likewise, been amended to clarify an issue as to form for the recited Markush group. New claims 88 to 100, which are dependent of claim 15, have been added. Claims 88-99 find support inter alia in claims 1-14. New claim 100 is dependent on claim 1. No new matter is added.

The amendment to the detailed description at page 11 finds support in Table 2 at page 15 with respect to the amount of EGDM in the B side. Claim 11 has similarly been amended.

No fees are believed due in connection with the added claims in view of the cancellation of claims previously paid for.

Claims 1-6 and 8-15 were rejected under § 112, second paragraph for use of the word "or" in claim 1, line 6. The correction of this term to the word "and" has been made in the amendment. The rejection should therefore be withdrawn.

The examiner also stated that there was no clear line of demarcation between the methyl methacrylate and isobornyl methacrylate in line 2 of claim 3 and the alkyl ester of methacrylic acid in line 6 since the former two methacrylates are encompassed by the latter generic term. In response, this claim has been amended to delete the term "alkyl ester of methacrylic acid." The rejection should therefore be withdrawn.

Claims 1, 3-6, and 8-15 were rejected under §103 based on EP 96,500. The examiner reasoned that EP '500 disclosed a two-part adhesive containing parts 1 and 2. Part 1 contained tetrahydrofurfuryl methacrylate, methacrylic acid, 1,3-butylene glycol dimethacrylate, an ethylene-methyl acrylate copolymer, benzoyl peroxide, and 2,6-di-t-butyl-4-methoxyphenol. Part 2 contained the same monomers and copolymer along with N,N-dihydroxyethyl-p-toluidine and ferrocene. The examiner asserted it would be obvious to employ the hydroquinone as the stabilizer of EP '500 in both part 1 and part 2.

In response, applicant notes that claim 1 as amended calls for 10 to 80 percent by weight of difunctional methacrylate based on the total weight of the adhesive system. By contrast, EP '500

discloses only 2 percent of its difunctional methacrylate in the examples, which is the only place in EP '500 where any amounts of difunctional methacrylate are disclosed. The claimed lower end of 10 percent is roughly 5 times greater than that disclosed in EP '500 if EP '500 discloses 2 percent of the total adhesive (and roughly 10 times greater if the 2 percent is for an A side or B side only). As such, EP '500 does not teach or suggest compositions that employ 10 to 80 percent by weight of difunctional methacrylate.

Claims 1, 3-6, and 8-15 were rejected under §103 based on EP 452,540 and JP 53-144760 in view of EP 96,500. The examiner reasoned that EP '540 and JP '760 each disclosed two-part adhesives wherein one part contains (meth)acrylate and dimethacrylate monomers and an organic peroxide, and the other part has the same monomers with N,N-dimethyl-p-toluidine. The examiner asserted it would have been obvious to add the hydroquinone stabilizer of EP '500 into both parts of the two-part adhesives of EP '540 and JP '760.

In response, applicant initially notes that EP '500 has been distinguished since it does not teach or suggest 10 to 80 percent difunctional methacrylate.

Similarly, the JP '760 abstract gives no percentages whatsoever for the difunctional methacrylate. Hence, JP '760 also does not teach or suggest 10 to 80 percent difunctional methacrylate in the adhesive system. JP '760 does not, moreover, teach or suggest an alkylene glycol dimethacrylate.

In addition to the English abstract provided by the examiner, applicant obtained a translation of Tables 1 and 2 in JP '760. A copy of the English translation of Tables 1 and 2 are attached.

With respect to EP '540, applicant notes that the difunctional methacrylate employed is 2,2-bis-(4-(2-methacryloyloxyethoxyphenyl))-propane. (See the attached Derwent English abstract for EP '540, which was accessed through Delphion.) The amended claims, by contrast, recite that the difunctional methacrylate is an alkylene glycol dimethacrylate. EP '540, alone or in combination with any of the applied references, does not teach or suggest alkylene glycol dimethacrylate as claimed.

The rejection of claims 1, 3-6 and 8-15 based on EP 452,540 and JP 53-144760 in view of EP 96,500 should therefore be withdrawn.

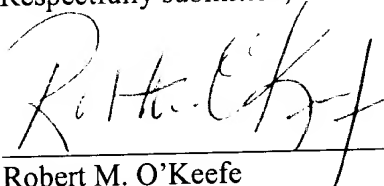
CONCLUSION

In view of the foregoing, it is submitted that the §103 rejections should be withdrawn. Favorable reconsideration and prompt issuance of a Notice of Allowance is respectfully requested.

No fee is believed to be due, however, should any fees under 37 CFR 1.16-1.21 be required for any reason relating to the enclosed materials, the Commissioner is authorized to deduct such fees from Deposit Account No. 10-1205.

The examiner is invited to contact the undersigned at the phone number indicated below with any questions or comments, or to otherwise facilitate expeditious and compact prosecution of the application.

Respectfully submitted,



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APPENDIX
MARKED UP VERSION OF AMENDMENTS
AS REQUIRED BY RULE 121

In the specification:

At page 11, lines 9-16, the paragraph has been amended as follows:

Part B of the two-component system includes an alkylene glycol dimethacrylate (a difunctional methacrylate monomer) such as EGDM or propylene glycol dimethacrylate, an optional thixotrope and an antioxidant as described above, and an activator for the peroxy free-radical initiator. Alkylene glycol dimethacrylates are typically present in Part B in amounts of [80] 5 to 99 percent. The activator may be a tertiary aromatic amine such as N,N-dimethyl-p-toluidine (DMPT), N,N-dimethylaniline (NNDMA), N,N-diethylaniline, or 4,4'-methylenebis (N,N-dimethylaniline) (MBNNDMA). The activator may be present in any effective amount, generally from about 0.5 to about 5.0 percent by weight of the Part B formulation.

In the claims:

1. (Amended) A two-part adhesive system, comprising:

(a) an adhesive part A, which comprises:

a monomer selected from the group consisting of a monofunctional acrylate monomer, a difunctional acrylate monomer, a trifunctional acrylate monomer, a monofunctional methacrylate monomer, a difunctional methacrylate monomer, a trifunctional methacrylate monomer, [or] and a combination thereof;

a peroxide or hydroperoxide free-radical initiator; and
an antioxidant;

(b) an activator part B, which comprises:

a N,N-disubstituted aromatic amine,
a difunctional methacrylate monomer,
an antioxidant,

wherein the difunctional methacrylate monomer is present in an amount of from 10 to 80 percent by weight based on the total weight of the adhesive system, and wherein the difunctional methacrylate monomer is an alkylene glycol dimethacrylate.

2. The system of claim 1 further comprising and a thickener, a thixotrope, an adhesion promoter, or combination thereof.

3. (Amended) The system of claim 1 wherein for Part A the monomer is selected from the group consisting of methyl methacrylate, methacrylic acid, isobornyl methacrylate, ethylene glycol dimethacrylate, ethoxylated bisphenol A diacrylate esters, tetraethylene glycol dimethacrylate, diethylene glycol dimethacrylate, diethylene glycol diacrylate, tris (2-hydroxyethyl) isocyanurate triacrylate, an alkyl ester of acrylic acid, a hydroxy alkyl ester of acrylic acid, [an alkyl ester of methacrylic acid,] a hydroxy alkyl ester of methacrylic acid, butyleneglycol dimethacrylate, tetraethyleneglycol dimethacrylate, polyethylene glycol dimethacrylate, bisphenol A dimethacrylate, ethoxylated bisphenol A dimethacrylate, pentaerythritol dimethacrylate, butyleneglycol trimethacrylate, tetraethyleneglycol trimethacrylate, polyethylene glycol trimethacrylate, bisphenol A trimethacrylate, ethoxylated bisphenol A trimethacrylate, and pentaerythritol trimethacrylate.

4. (Amended) The system of claim 1 [wherein for Part B the difunctional methacrylate monomer is present in an amount of from about 10 to about 80 percent based on weight, and] wherein any other monomers present are in amounts ranging from about 5 to about 30 percent based on weight of the total formulation.

5. The system of claim 1 wherein the free-radical initiator is benzoyl peroxide (BPO), cumene hydroperoxide, or a combination thereof.

6. The system of claim 1 further comprising fused silica in Part A.

7. (Canceled.)

8. The system of claim 1 wherein the antioxidant is hydroquinone, benzoquinone, or a combination thereof.

9. The system of claim 1 wherein in Part B the difunctional methacrylate monomer is ethylene glycol dimethacrylate or propylene glycol dimethacrylate.

10. The system of claim 1 wherein in Part A the monomer is ethylene glycol dimethacrylate or propylene glycol dimethacrylate.

11. The system of claim 1 wherein in Part B the difunctional methacrylate monomer is present in an amount of from about [80] 5 percent to about 99 percent.

12. The system of claim 1 wherein in Part B the N,N-disubstituted aromatic amine is N,N-dimethyl-p-toluidine, N,N-dimethylaniline, N,N-diethylaniline, or 4,4'-methylenebis (N,N-dimethylaniline).

13. The system of claim 1 wherein the N,N-disubstituted aromatic amine is present in an amount of from about 0.5 to about 5.0 percent by weight of Part B.

14. The system of claim 1 wherein the amounts of parts A and B are at a volume ratio of part A to part B of about 1:1.

15. (Amended) The reaction product formed from a two-part adhesive system comprised of a part A and a part B, wherein [the] part A and part B comprise:

(a) an adhesive part A, which comprises:

a monomer selected from the group consisting of a monofunctional acrylate monomer, a difunctional acrylate monomer, a trifunctional acrylate monomer, a monofunctional methacrylate monomer, a difunctional methacrylate monomer, a trifunctional methacrylate monomer, [or] and a combination thereof;

a peroxide or hydroperoxide free-radical initiator; and

an antioxidant;

(b) an activator part B, which comprises:

a N,N-disubstituted aromatic amine,
a difunctional methacrylate monomer,
an antioxidant,

wherein the difunctional methacrylate monomer is present in an amount of from 10 to 80 percent by weight based on the total weight of the adhesive system, and wherein the difunctional methacrylate monomer is an alkylene glycol dimethacrylate.